

Message

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Sent: 3/6/2012 3:01:07 PM
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Subject: NEWS UPDATES: New Dioxin Report: What it means (Center for Health, Environment & Justice)

New Dioxin Report: What it means

<http://chej.org/2012/03/new-dioxin-report-what-it-means/>

Several weeks ago EPA released the non-cancer portion of the EPA's health assessment for the chemical known as dioxin. The event passed without industry collapsing, without the public going into panic as was anticipated by the food industry, and basically without the world coming to an end. The myriad forecasts of doom that industry and its apologists predicted did not come to pass. In fact, the media barely took notice. Why? – Because the reassessment did not set any new standards or introduce any new regulations. It simply provided the scientific basis for determining the risks that dioxin poses, though in this case, just the non-cancer risks (EPA is still working on the cancer report).

The non-cancer effects of dioxin as described in the report are quite serious. In a recent review paper, Dr. Linda Birnbaum, Director of the NIEHS, summarized the adverse health effects of dioxin exposure in humans as

including “cardiovascular disease, diabetes, cancer, porphyria, endometriosis, early menopause, reduced testosterone and thyroid hormones, altered immune responses, skin, tooth, and nail abnormalities, altered growth factor signaling, and altered metabolism.”

Most notably, the non-cancer assessment included for the first time a value called the *reference dose*. This is a number used to evaluate non-cancer risks and is generally defined as “a level below which exposures are generally considered to be safe.” The EPA’s Reference Dose for dioxin is 0.7 picograms TEQ per kilogram per day (pg/kg/d) which was derived by evaluating developmental and reproductive effects in a community in Italy (Seveso) exposed to dioxin caused by an accident at a pesticide manufacturing plant.

What’s remarkable about the EPA reference dose is when you compare this number to the average daily exposure of the American public to dioxin (defined as the daily intake from all sources, 90% of which comes from food). Using the most recent data from EPA (see [Lorber et al. 2009](#)) the average daily exposure is 0.54 pg TEQ/kg/d compared to EPA’s reference dose of 0.7 pg TEQ/kg/d. So the average person gets a daily dose of dioxin that’s 77% of EPA’s new reference dose. That’s the good news; the bad news is that the average is so very close to the EPA reference dose and that some groups, especially children, are exposed to higher levels that exceed the new EPA reference dose. This is because children have different eating habits than adults. They tend to eat more dairy products that are high in dioxin. Dioxin is prevalent in foods that are high in saturated fat, primarily meat and dairy.

A 2003 study conducted by a National Academy of Sciences [Committee on Dioxin in Food](#) bears this out. The committee found that children ages 1 to 5 were exposed to 1.09 pg TEQ/kg/day and children ages 6-11 years old were exposed to 0.69 pg TEQ/kg/day. This analysis shows that dioxin exposure in children 1 to 5 years old exceeds EPA’s reference or safe dose and that children 6 to 11 years old have dioxin exposure that is virtually identical to the EPA reference dose.

As a practical matter, this means that the best risk estimate we have on dioxin shows that the public, especially children are being exposed to unacceptable levels of dioxin that may be causing subtle adverse effects. These subtle effects likely include developmental effects that Dr. Birnbaum described in her review paper as posing the greatest concern “in part because the effects occur at the high end of the background range for the general population.” These exposures may exceed the EPA’s reference dose and even approach the levels observed in the study of Seveso, Italy. The developmental effects may include altered thyroid and immune status, altered neurobehavior at the level of hearing, psychomotor function, and gender-related behaviors, altered cognition, dentition, and development of reproductive organs, and delays in breast development, in addition to altered sex ratios among exposed offspring.

While no exposure to dioxin is the ideal, we are not there yet. In the meantime, exposure to dioxin in food, especially for children remains too high and needs to be addressed by EPA, FDA, and USDA. CHEJ strongly urges the EPA to finish and release their review on dioxin and cancer, and to develop a comprehensive action plan to further reduce dioxin emissions and exposures.

For a copy of EPA’s new dioxin health report, visit <http://www.epa.gov/dioxin>

To see CHEJ’s press release about this report, visit <http://bit.ly/dioxinvictory>

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